

S. E. TAFT.
MACHINE FOR CUTTING IN THE SHANKS OF SHOES.
APPLICATION FILED JULY 28, 1910.

1,048,374.

Patented Dec. 24, 1912.

2 SHEETS-SHEET 1.

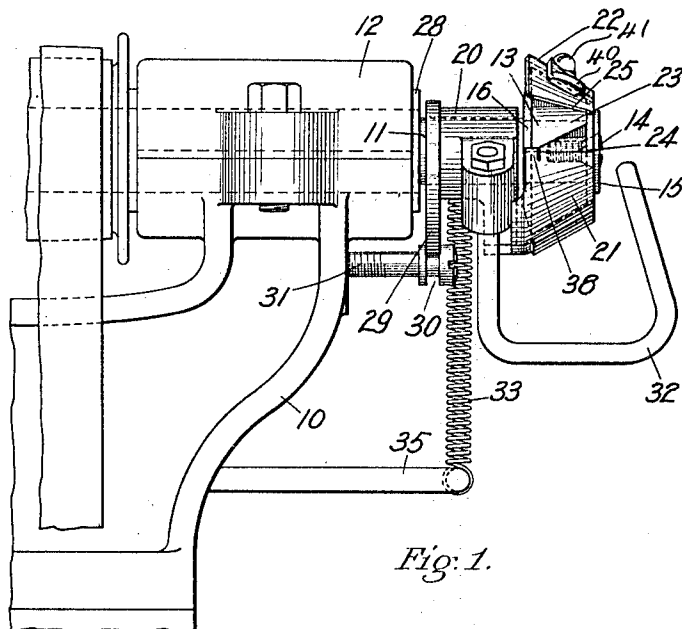


Fig. 1.

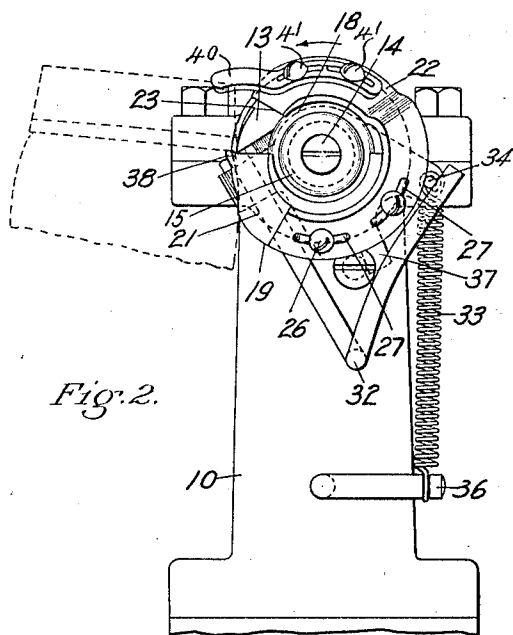


Fig. 2.

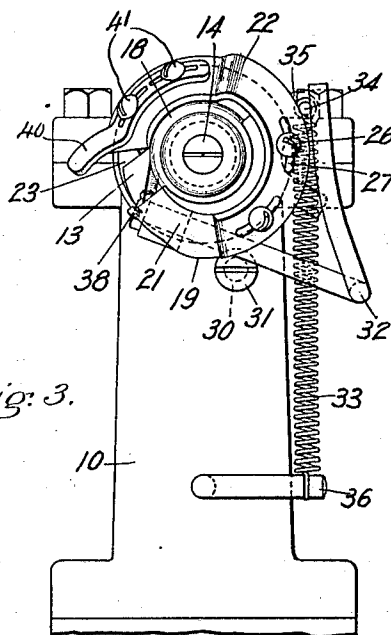


Fig. 3.

Witnesses:
Annie J. Dailey,
Sadie W. McCarty.

Inventor:
Sydney E. Taft,
by his attorney,
Charles N. Gooding.

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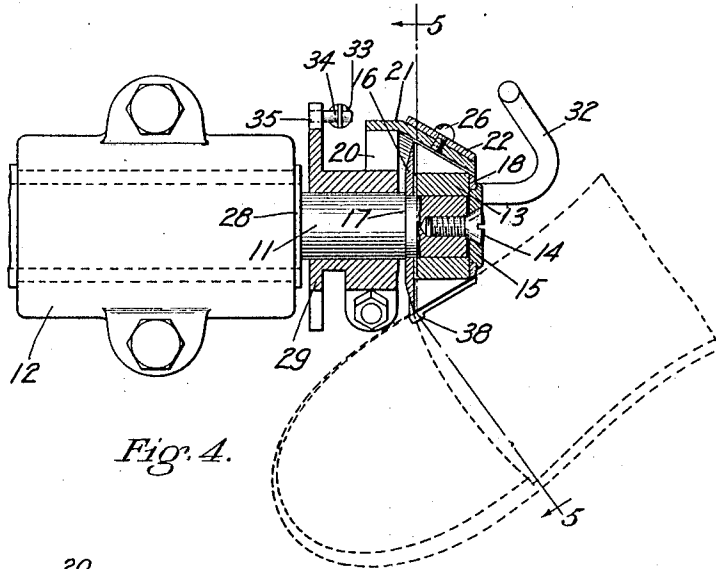


Fig. 4.

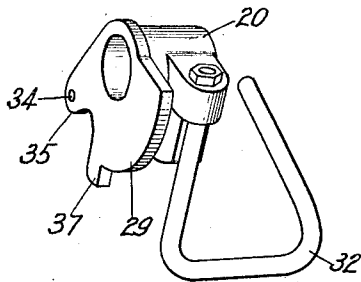


Fig. 7.

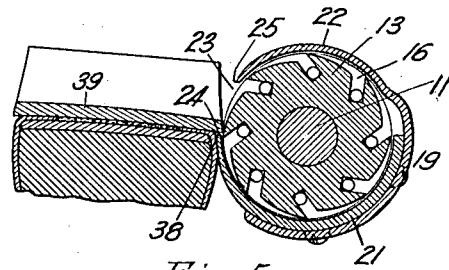


Fig. 5.

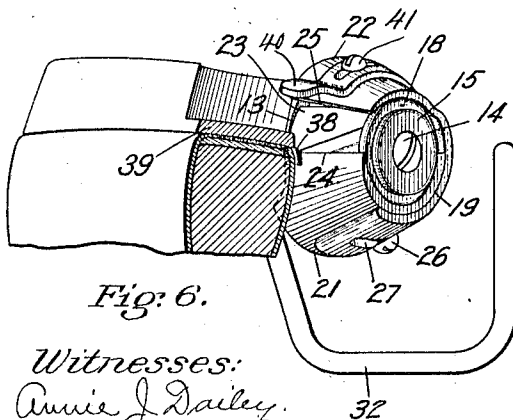


Fig. 6.

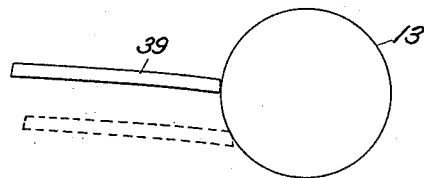


Fig. 8.

Witnesses:
Annie J. Dailey.
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UNITED STATES PATENT OFFICE.

SYDNEY E. TAFT, OF SOUTH FRAMINGHAM, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MACHINE FOR CUTTING IN THE SHANKS OF SHOES.

1,048,374.

Specification of Letters Patent.

Patented Dec. 24, 1912.

Application filed July 28, 1910. Serial No. 574,272.

To all whom it may concern:

Be it known that I, SYDNEY E. TAFT, a citizen of the United States, residing at South Framingham, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Machines for Cutting in the Shanks of Shoes, of which the following is a specification.

10 This invention relates to machines for performing that particular operation on the edge of the sole of a boot or shoe known as "cutting in" and is of that class of "cutting in" machines which is shown and described in U. S. patent to C. S. Gooding and S. E. Taft No. 939,007, dated November 2, 1909, and in which a rotary cutter is employed cutting transversely of the edge of the shoe adjacent to the breast of the heel.

20 The invention has among its objects to improve the gages and guards which are used in connection with said rotary cutter, to facilitate the speed with which the positioning of the shoe may be accomplished and also to increase the speed with which the "cutting in" operation can be performed, and furthermore the invention has for its object to make a convex edge upon the sole of the shoe adjacent to the breast of the heel during the "cutting in" operation, so that the portion adjacent to the breast of the heel shall be substantially a copy in cross sectional contour of that part of the edge of the shank portion of the sole of the shoe which has already been trimmed by the ordinary shank cutter.

35 The invention still further has for its object to perform the "cutting in" operation by one downward movement of the shoe relatively to the periphery of the cutter.

40 The invention relates particularly to the gage which rests against the upper face of the sole of the shoe during the trimming operation and to the gage at the front of the cutter which rests against the edge of the sole of the shoe. The gage which enters the crease of the shoe between the upper and the upper face of the sole and rests preferably against the upper face of the sole is movable relatively to the rotary cutter and preferably is rotatably mounted to move about the median axial line of the rotary cutter. This gage, on account of the small amount of space which can be utilized therefor is preferably supported upon a guard which ex-

tends across the periphery of the rotary cutter and protects the upper of the shoe from injury. The gage at the front side of the cutter rests against the edge of the sole which has already been trimmed by the rotary shank cutter of the ordinary edge trimming machine, and, as will be hereinafter fully described, the edge of the shank portion of the shoe which has been trimmed rests against this front edge gage and forms a pattern which coacts with said front edge gage in such a manner that the rotary cutter, in its "cutting in" operation, reproduces the sectional contour of said trimmed edge on the edge of the sole trimmed thereby adjacent to the breast of the heel.

In the "cutting in" operation, the operator, therefore, places the upper face of the sole against the crease gage and moves the shoe downwardly once and then removes the shoe from the machine, the work thus being performed in a single operation. The front edge gage is preferably mounted loosely upon a stud upon the front end of the shaft to which the rotary cutter is fastened and concentric therewith, so that it will rotate as the shoe is carried downwardly, as hereinbefore set forth, by means of the frictional contact of the edge of the shank portion of the sole of the shoe with the periphery thereof, but this front gage may be made stationary, if desired, without departing from the spirit of my invention.

Other features of the invention including certain combinations and arrangements of parts will be set forth in the following description and particularly pointed out in the claims.

Referring to the drawings: Figure 1 is a side elevation of my improved machine for "cutting in" the shanks of shoes, a portion of the same being broken away to save space in the drawings. Fig. 2 is a front elevation of the same with the parts in position to begin the "cutting in" operation. Fig. 3 is a front elevation of the same with the parts in the relative positions assumed thereby when the "cutting in" operation is just being completed. Fig. 4 is a plan view of the rotary cutter, its carrying shaft and the front bearing, together with the gages and guards, the cutter, gages and guards being shown in section and a portion of a shoe shown in connection with said cutter in dotted lines. Fig. 5 is a sectional elevation

taken on line 5—5 of Fig. 4 looking toward the left in said figure and a portion of a shoe being shown in proper position to be trimmed in connection therewith. Fig. 6 is
 5 a perspective view taken from the front of the machine and illustrating the rotary cutter and the different gages and guards, with a portion of a shoe shown in proper position to be trimmed in connection therewith.
 10 Fig. 7 is a perspective view of the carrier for the edge gage and upper guard as viewed from the rear of the machine looking toward the front. Fig. 8 is a detail diagrammatic view illustrating the shoe sole and cutter and the manner in which the sole
 15 is moved from one position to another to obtain the convexly curved edge in the trimming operation.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is the frame of the machine and 11 the main driving shaft adapted to rotate in suitable bearings, one of which 12 is shown in the drawings. A
 25 rotary cutter 13 is fastened to the main driving shaft 11 and is preferably clamped thereto by a screw 14 and collar 15.

A breast gage 16 is preferably fastened to the shaft by being clamped between the
 30 cutter 13 and a shoulder 17 formed on said shaft. An edge gage 18 is preferably rotatably mounted upon the collar 15, this edge gage being adapted to rest against the edge of the shank portion of the sole. The breast
 35 gage 16 is adapted to rest against the breast of the heel of the shoe which is being trimmed.

A guard 19 extends across the periphery of the cutter 13 and is fastened to a carrier
 40 20 rotatably mounted upon the shaft 11. The guard 19 is preferably made in two parts 21 and 22 which extend across the periphery of the cutter and have a space 23, forming a slot or opening, between their adjacent edges
 45 24 and 25, respectively. The part 21 is fastened directly to the carrier 20 (Fig. 4) and the part 22 is fastened to the part 21 by means of screws 26, 26 which project through slots 27, 27 in the part 22 and have screw-
 50 threaded engagement with the part 21, so that said part 22 can be adjusted circumferentially of the cutter and the edge 25 brought nearer to or farther away from the edge 24, thus narrowing the space 23 between the adjacent edges 24 and 25, as may
 55 be desired.

The carrier 20 is shown as rotatably mounted upon the shaft 11, but it is evident that the same may be mounted upon a stationary
 60 support, if desired, as, for instance, the bearing sleeve 28 may be extended to form a support for said carrier. The carrier 20 has a segmental flange 29 thereon which projects into an annular groove 30 formed in a screw
 65 31 which has screw-threaded engagement

with the frame 10 of the machine, so that by turning said screw 31 in one direction or the other, the carrier 20, and consequently the guard 19, can be adjusted longitudinally of the shaft 11 and relatively to the periphery
 70 of the cutter so as to make more or less space between the inside of the parts 21 and 22 of the guard 19 and the periphery of the cutter 20, when desired. The carrier 20 has a handle 32 fast thereto and of suitable shape
 75 to be conveniently operated by the operator during the cutting operation to rock said carrier upon the shaft 11.

A spring 33 is connected at one end to a pin 34 fast to an ear 35 on said carrier and at the other end said spring is connected to a rod 36 fast to the frame of the machine. The carrier 20 also has a stop lug 37 thereon which is adapted to strike against the screw 31 and limit the distance to which the carrier
 80 can be rocked by the spring 33 in one direction.

A gage 38 projects outwardly and preferably upwardly from the edge 24 of the part 21, this gage being adapted to rest against
 90 the upper face of the sole 39 of the shoe adjacent to the edge thereof and adjacent to the breast of the heel and projecting outwardly from the part 21.

A stop 40 is adjustably secured by screws
 95 41 to the part 22 of the guard and overhangs the slot 23 projecting away from the periphery of the cutter as best shown in Figs. 2, 3 and 6. The end of the stop 40 is so positioned that it will engage the tread face of
 100 the sole at a substantial distance from its edge and limit the tipping or locking movement of the shoe during the trimming operation.

The general operation of the machine here-
 105 inbefore specifically described is as follows: The shoe is held by the operator as illustrated in Figs. 4, 5 and 6 with the upper face of the sole of the shoe adjacent to the breast of the heel resting on the gage 38, with the
 110 gage 18 resting against the edge of the sole and with the gage 16 resting against the breast of the heel. The operator then moves the shoe downwardly from approximately the position illustrated in Fig. 8 in full lines
 115 to that shown in dotted lines. During this downward movement, the rotary cutter 13 trims the edge of the sole 39 from the breast portion of the heel up to that portion of the edge of the sole which has been previously
 120 trimmed and imparts to it a convex rounded edge of substantially the form of that portion of the edge of the sole against which the gage 18 rests, said gage 18 thus acting,
 125 in conjunction with the edge of the sole which has been previously trimmed, as a pattern to guide the shoe relatively to the cutter during the downward movement of the shoe so as to trim the edge of the sole
 130 which has not been trimmed and give the

same a convex curve in cross section. The gage 16 during the trimming operation rests against the breast of the heel of the shoe and the upper face of the sole rests against the gage 38 and rocks slightly thereon as the shoe is pushed downwardly by the operator. During this pushing down of the shoe and the trimming of the edge thereof, the carrier 20 tips or rocks upon the shaft 11 and is assisted by the hand of the operator in this rocking motion, if desired, by means of the handle 32, it being understood that during the trimming operation the two parts 21 and 22 of the guard 19 tip or rock with said carrier 20 and always prevent the upper of the shoe from coming into contact at any point of the trimming operation with the rotary cutter 13.

Having thus described my invention, what I claim and desire by Letters Patent to secure is:

1. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, and a gage adapted to bear against one face of said sole adjacent to the edge thereof and mounted to move during the trimming operation relatively to said cutter.

2. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, and a gage adapted to bear against one face of said sole adjacent to the edge thereof and yieldingly mounted to move relatively to said cutter during the trimming operation.

3. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, and a gage adapted to bear against one face of said sole adjacent to the edge thereof, said gage being rotatably mounted to move relatively to said cutter during the trimming operation.

4. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, and a gage adapted to bear against one face of said sole adjacent to the edge thereof and rotatably mounted to move relatively to said cutter and a spring connected to said gage and adapted to rock the same in one direction.

5. A machine for trimming the edge of

the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, a rotary carrier and a gage fast to said carrier and adapted to bear against the upper face of said sole adjacent to the edge thereof.

6. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, a rotary carrier, a gage fast to said carrier and adapted to bear against the upper face of said sole adjacent to the edge thereof, and a spring fast to said carrier and adapted to rock the same in one direction.

7. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, a rotary carrier, a gage fast to said carrier and adapted to bear against the upper face of said sole adjacent to the edge thereof, a spring fast to said carrier and adapted to rock the same in one direction, and a stop adapted to be engaged by said carrier to limit the extent to which it can be rocked by said spring.

8. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, a rotary carrier, a gage fast to said carrier and adapted to bear against the upper face of said sole adjacent to the edge thereof, a flange on said carrier, and a screw provided with an annular groove into which said flange projects, whereby said carrier and gage may be adjusted relatively to said cutter.

9. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel, having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, a gage adapted to bear against one face of said sole adjacent to the edge thereof and mounted to move relatively to said cutter during the trimming operation, and a handle connected to said gage, whereby the same may be moved.

10. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to extend inwardly in front of the breast of said heel, said cutter adapted to cut transversely of and trim the edge of

said sole up to and in front of the breast of said heel, and a rotatably mounted gage concentric with said cutter adapted to bear against the edge of said sole at the front
5 side of said cutter.

11. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim
10 the edge of said sole adjacent to and in front of the breast of said heel, a gage adapted to bear against the breast of said heel at the rear side of said cutter, and another gage rotatably mounted and adapted to bear
15 against the edge of said sole at the front side of said cutter.

12. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary
20 cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, a shaft to which said cutter is fastened, a collar fast to the end of said shaft adapted to
25 hold said cutter thereon and a gage loosely mounted on said collar and adapted to bear against the edge of said sole in front of said cutter.

13. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary
30 cutter adapted to extend inwardly in front of the breast of said heel, said cutter being adapted to cut transversely of and trim the edge of a sole adjacent to and in front of
35 the breast of said heel, and a guard adapted to bear against the upper of said shoe and protect the same from injury by said cutter, said guard being mounted to move relatively
40 to said cutter during the trimming operation.

14. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary
45 cutter adapted to extend inwardly in front of the breast of said heel, said cutter being adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, and a guard adapted
50 to bear against the upper of said shoe and protect the same from injury by said cutter, said guard being mounted to move relatively to said cutter during the trimming operation, and a gage on said guard adapted
55 to project therefrom between said sole and upper.

15. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary
60 cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage extending across the periphery of said cutter and adapted to bear against one face of said
65 sole adjacent to said edge, and a rotatably

mounted guard extending across the periphery of said cutter and adapted to bear against the upper of said shoe adjacent to said edge.

16. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary
70 cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage adapted to bear against one face of said sole adjacent to said edge and mounted to move
75 during the trimming operation relatively to said cutter, a gage adapted to bear against the breast of the heel at the rear of said cutter, and a gage at the front of said cutter adapted to bear against the edge of said
80 sole.

17. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary
85 cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage adapted to bear against one face of said sole adjacent to said edge, a gage adapted
90 to bear against the breast of the heel at the rear of said cutter, a gage at the front of said cutter adapted to bear against the edge of said sole, and a guard adapted to bear against the upper of said shoe, said guard
95 being rotatably mounted to move relatively to said cutter during the trimming operation.

18. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary
100 cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, and two gages at the rear and front of said cutter, respectively, and adapted to position the shoe properly with relation to said cutter,
105 both of said gages being rotatably mounted.

19. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary
110 cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a rotatably mounted guard plate concentric with and
115 extending across the periphery of said cutter against which the upper of said shoe is adapted to bear, and a gage on said guard plate against which the edge of the sole of said shoe is adapted to bear.
120

20. A machine for trimming the edges of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary
125 cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage adapted to bear against one face of said sole adjacent to said edge, and a stop adapted
130 to be engaged by the other face of said

sole at a substantial distance from said edge, said stop and gage being mounted for movement relatively to said cutter during the trimming operation.

21. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edges of said sole adjacent to and in front of the breast of said heel, a guard extending across and partly around the periphery of said cutter, said guard being mounted to move about the periphery of the cutter during the trimming operation, and a gage projecting outwardly from one edge of said guard and adapted to bear against one face of said sole adjacent to the edge thereof.

22. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, a gage adapted to bear against one face of said sole adjacent to the edge thereof, and a rotatably mounted guard extending across and partly around the periphery of said cutter, with a slot between its adjacent edges extending transversely of said cutter.

23. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, a gage adapted to bear against one face of said sole adjacent to the edge thereof, and a guard in two parts extending across and partly around the periphery of said cutter with a slot between its adjacent edges extending transversely of said cutter, said parts being adjustable one on the other and circumferentially of said cutter whereby the width of said slot may be varied.

24. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, and three rotatable gages adapted to position said shoe relatively to said cutter, one of said gages at the front and one at the rear of said cutter and a third gage located between the other two and adjacent to the periphery of said cutter.

25. A trimming machine comprising, in combination, a rotary cutter constructed and shaped to trim that portion of the sole edge of a shoe between the line of the heel breast and the point in the shank at which the usual machine trimming operation is

stopped, and means for protecting the other parts of the shoe during the trimming operation from contact with said cutter while the sole edge is presented to the cutter transversely of the cutter's periphery, but constructed to permit the sole edge to be moved along the periphery of the cutter while still protecting the other parts of the shoe from the action of the cutter.

26. A trimming machine comprising, in combination, a rotary cutter constructed and arranged to trim that portion of the sole edge of a shoe adjacent to but in front of the line of the heel breast, and means for protecting the other parts of the shoe during the trimming operation from contact with said cutter while the sole edge is presented to the cutter transversely of the cutter's periphery, said means being constructed and arranged to permit a movement of the sole edge along the periphery of the cutter while maintaining its relation to said projecting means substantially unchanged.

27. A trimming machine comprising, in combination, a rotary cutter constructed and arranged to trim that portion of the sole edge of a shoe adjacent to but in front of the line of the heel breast, means for protecting the other parts of the shoe during the trimming operation from contact with said cutter while the sole edge is presented to the cutter transversely of the cutter's periphery, said means comprising a guard constructed and arranged to protect the upper of the shoe, said guard being mounted to be moved by the shoe as the sole is moved along the periphery of the cutter, and means to return the guard to normal position after it has been released from the shoe.

28. A trimming machine comprising, in combination, a rotary cutter constructed and arranged to trim that portion of the sole edge of a shoe adjacent to but in front of the line of the heel breast, means for protecting the other parts of the shoe from contact with said cutter while the shoe is presented to the cutter transversely of the periphery of the cutter, said means being constructed and arranged to permit the sole edge to be moved along the periphery of the cutter while still protecting the other parts of the shoe from the action of the cutter, and means whereby said protecting means may be adjusted relatively to the periphery of the cutter.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SYDNEY E. TAFT.

Witnesses:

LOUIS A. JONES,
LEONARD A. POWELL.